AMENDMENT 1 APRIL 2017
TO
IS 15388 : 2003 SILICA FUME — SPECIFICATION

(*Second cover page*, *para* 5) — Substitute 'Annex C' *for* 'Annex A'.

(*Page* 1, *clause* 2) — Insert the following entry at an appropriate place:

IS No.	*Title*
4032 : 1985	Method of chemical analysis of hydraulic cement

(*Page* 1, *Table* 1, *Note* 3) — Substitute the following for the existing note:

'**3** The alkalies shall be determined as per the procedure given in Annex A.'

(*Page* 2, *Table* 2, *row* 1, *col* 4) — Substitute 'B' *for* 'A'.

(*Page* 3, *Annex* A) — Insert the following new annex and renumber the subsequent annexes:

ANNEX A
METHOD FOR DETERMINATION OF AVAILABLE ALKALIS
(*Table* 1)

A-1 PROCEDURE

A-1.1 Weigh 5.0 g of the sample and 2.0 g of hydrated lime on a piece of weighing paper, carefully mix using a metal spatula and transfer to a small plastic vial of approximately 25 ml capacity. Add 10.0 ml of water to this mixture; seal the vial by securing the cap or lid to the vial with tape (*see* Note), blend by shaking until the mixture is uniform, and store at 38 ±2°C.

NOTE — To ensure that moisture loss from the paste does not occur, place the sealed vial in a sealable container (such as a small sample or mason jar), add sufficient water to cover the bottom of container, and seal.

A-1.2 Open the vial at the age of 28 days and transfer the contents to a 250 ml casserole. Break up and grind the paste with a pestle, adding a small amount of water, if necessary, so that uniform slurry containing no lumps is obtained (*see* Note). Add sufficient water to make the total volume to 200 ml. Let it stand 1 h at room temperature and stir frequently. Filter through a mediumtextured filter paper onto a 500 ml volumetric flask. Wash thoroughly with hot water (eight to ten times).

NOTE — At times it may be necessary to break the vial and peel off the plastic from the solid cake. In such cases, care should be exercised to avoid the loss of material and to remove all solid material from the fragments of the vial. If the cake is too hard to break up and grind in the casserole, a mortar should be used.

A-1.3 Neutralize the filtrate with dilute HCL (1+3), using 1 to 2 drops of phenolphthalein solution as the indicator. Add exactly 5 ml of dilute HCl (1+3) in excess. Cool the solution to room temperature and fill the flask to the mark with distilled water. Determine the amount of sodium and potassium oxide in the solution using the flame photometric procedure, described in IS 4032, except that the standard solution shall be made up to contain 8 ml of calcium chloride ($CaCl_2$) stock solution per litre of standard solution, and the solution as prepared shall be used in place of solution of cement.

NOTE — The standard solutions made up with 8 ml of calcium chloride ($CaCl_2$) stock solution contain the equivalent of 504 ppm of CaO. Tests have shown that this amount closely approximates the amount of calcium dissolved in the test solution.

A-2 CALCULATION AND REPORTING OF RESULTS

Calculate the results as percent by mass of the original sample material. Report as equivalent percentage of sodium oxide (Na_2O), calculated as follows:

$$\text{Equivalent } Na_2O\text{, percent} = Na_2O\text{, percent} + 0.658 \times K_2O\text{, percent}$$

(CED 02)

Publication Unit, BIS, New Delhi, India